CALIFORNIA DEPARTMENT OF Mental Health

# LTCS BEST PRACTICE CATALOG SUBMISSION COVER SHEET

**TYPE OF SUBMISSION:**

[X] **NEW**

[ ] **REVISED - Replaces** _____
**Current submission catalog number**

[ ] **UPDATE - To** _____
**Current submission catalog number**

[ ] **CHANGE IN CONTACT INFORMATION**

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**Date Submitted To Hospital/Division:** _____

**Approved for submission to LTCS Best Practice Committee** [ ]

**Date Submitted To LTCS Best Practice Committee:** _____

**Approved for submission to LTCS Best Practice Catalog** [ ]

CALIFORNIA DEPARTMENT OF Mental Health

# LTCS BEST PRACTICE CATALOG SUBMISSION

**Project Title:** **Antibiotic Nomagram**

**Function Category:**

[X] **PATIENT-FOCUSED** [ ] **ORGANIZATION** [ ] **STRUCTURES**

**Sub-category(s): Assessment of Patient**

**Heading: Practice Guidelines, Protocols, and Parameters**

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**Hospital:** **Atascadero State Hospital**

**The following items are available regarding this Best Practice:**

- [ ] Forms
- [ ] Policies/Procedures
- [ ] Photographs
- [ ] Video Tape
- [ ] Drawings/Pictures
- [ ] Manual
- [ ] Curriculum Material
- [x] **Project Outcome Data**
- [x] **Other – Paper Hardcopy of Antibiotic Nomogram Grid and Antibiotic Cost Table**
- [x] **Other – Computer file - Excel spreadsheet for the nomogram template**

## 1. SELECTION OF PROJECT/PROCESS AREA (Describe how and why your team selected this project/process area for improvement.):

The ASH Antibiotic Nomogram is a quick-reference table that helps care givers prescribe the most appropriate and the most cost effective antibiotic for any given infection.

**I. B. 3. 004**

## 2. UNDERSTANDING EXISTING CONDITION WHICH NEEDS IMPROVEMENT

**(Describe the relationship of your project to your goals for improvement, and describe current process performance.):**

Before the ASH nomogram was created, ASH physicians would work with the Public Health dept. and the lab to prescribe antibiotics. The physician did not always have precise information about susceptibility of bacteria or cost information about antibiotics at their fingertips when prescribing. The pharmacy was not included immediately in the information loop regarding the results of the microbiology report.

In some cases prescribers were using large-spectrum, more expensive antibiotics incurring unnecessary costs and running the risk of inadvertently contributing to the development resistant strains of bacteria. The specific improvements incorporated in the nomogram concept are:

- Providing information enabling the using of specific and appropriate antibiotics for the most infections encountered in our patient population
- Providing information enabling the use of the most cost-effective antibiotic possible
- Providing information to avoid the development resistant strains of bacteria

## 3. ANALYSIS **(Describe how the problem was analyzed.):**

A pharmacist reviewed all of the Microbiology reports from the hospital's Public Health dept. from Jan-Dec of 2000. The reports indicated what infections were found and what drugs were prescribed to treat them. The results of those reports were compared with what is standard of practice for treatment of infectious diseases in the greater field of medicine.

## 4. IMPLEMENTATION **(Describe your implementation of the solution.):**

The pharmacist created a nomogram grid presenting the results of the data collected which details the susceptibility of the organisms we found to the antibiotics in the ASH pharmacy formulary. The final analysis showed us what is effective antibiotic treatment in our own patient population. In the cases where our incidence of a particular bacteria was low, reference guidelines were used to provide recommendations for prescribing. The resulting 'Nomogram' is a table indicating the most effective antibiotics to prescribe for each bacteria.

Also included in the presentation are costs per dose and per day of all the ASH formulary antibiotics to help the prescriber choose the most cost-effective agent for treatment

**5. RESULTS (Demonstrate that an improvement has occurred as a result of the project/process area implementation.):**

The results of the microbiology report review showed us that we were under-treating some infections, and in others, using more expensive antibiotics than were necessary.

The nomogram and cost table will be shared with the hospital Pharmacists, the Medication Use PMT, the Dept of Medicine including nurse practitioners, the laboratory staff, and others as needed.

The double-sided nomogram / cost table will be photocopied onto colored paper and given wide distribution with appropriate treatment staff to maximize its use.

**6. LEARNING (Describe what the team learned and how they used those lessons to continuously improve the success of this Best Practice.):**

Because of the improvement initiative, the Pharmacy now gets a FAX copy of final microbiology results from the laboratory immediately which enables them to assist physicians in selecting the most clinically and cost effective antibiotic and to help monitor the trends of bacterial susceptibility and resistance in our patient population.

The Pharmacy will continue to study the Microbiology reports on an annual basis and update the nomogram and cost tables as needed.

The effort also pointed out another opportunity for improvement in that when our patients go to an outside hospital / acute care setting, the infection records we that we receiving from them are not always complete or timely. Improvements in communication will help us to better monitor our patients and help us to keep our own database up to date for purposes of analysis and trending.

The effort points out an area for particular attention. Extreme care is required in the treatment of MRSA: (methicillin resistant staff aureus) This is a very serious infection that is resistant to all antibiotics except vancomycin. If we don't treat it in an appropriate and precise way we run the risk of 'growing' it and spreading it.